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THE PRODUCTION AND VALUE OF WHITE PINE
AND
OTHER WOODS IN RHODE ISLAND IN 1924

By

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and

UNITED STATES DEPARTMENT OF AGRICULTURE

COOPERATING

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This study was undertaken in the early part of 1925 by the Rhode Island State Board of Agriculture in cooperation with the Bureau of Plant Industry, United States Department of Agriculture. Definite and concrete facts, regarding the production and value of white pine, were needed for use in effecting the control of the white pine blister rust disease in Rhode Island.

Forms for recording the data collected from the various operators and jobbers were prepared. A list of operators was made up from directories, from interviews with town officials, from personal acquaintances, and from the lists of steam saw mills in the office of the Boiler Inspector. Introductory letters were mailed to these operators. These men were then systematically interviewed and the data obtained recorded upon the data sheets. Information was freely given, though some difficulty developed in getting actual and accurate figures instead of guesses from some of the operators who did not keep records of their work. The majority of saw milling is done by the light portable mills, and, as it is a more or less transient trade, in a few instances it was found to be impossible to interview the man who conducted a known operation during 1924. Such general information as could be obtained from the owner of the property or from some person familiar with the work done, was recorded as such, in order to make the survey as complete as possible.

Operators of saw mills agreed that 1924 was not a prosperous year for their business. Many reasons for this were advanced. Among the more frequent complaints was that concerning the shortage of cheap labor formerly available in rural sections of the state. Labor has been attracted

to the textile mills and to the state road repair gangs at advanced wages. The use of hardwood veneer box shooks by the textile trade has increased enormously in the past few years. This change in shipping practice has reduced the demand for local white pine box shooks as evidenced by the price reduction in the last few months. The cost of transportation of lumber and cordwood to the market in Providence was also given for a reason. The universal cause of the decline of this industry, however, as mentioned by all operators was the growing scarcity of timber of saw mill size. The portable steam saw mill which could set up on a woodlot and saw 200 M bd. ft. of good pine, oak, or chestnut is now being forced to set up on smaller lots where it may saw but 50 M bd. ft. of inferior quality lumber. The overhead cost of moving the mill remains the same for either operation. More immature trees are being cut in order to boost the bd. ft. production to compensate for higher operating costs, which fast brings about devastation instead of the proper use of Rhode Island woodlots. Nature should be assisted in restoring the forests of the state to a more productive condition, which will in turn give stability to the saw mill industry.

The trees of commercial importance in Rhode Island are the white pine, the white and red oak, the red maple and the hard pine. The chestnut formerly occupied an enviable position in the list of important species grown in this state, but the dead, blighted trees are rapidly being cut out and the pathologists do not hold out much hope for a survival of an immune strain of the native chestnut. Several other species of trees are cut and contribute in a small way to the total output of wood products, but it has been impossible to keep records of them as separate species in this report. The white and the red oaks have been grouped together under the head of "Oaks" for a like reason. A brief description of the important species will be given.

White pine, (*Pinus strobus*), is the most important timber tree in the state, growing under a great variety of conditions of soil and shade, producing a mature crop in about fifty years, and having a prolific reproduction under favorable conditions. It is found abundantly in all sections and becomes the dominant tree-type of the western half of the state. It does best on a light, well-drained soil, but will thrive on light drift sand or heavy clay and lime soils. The tree will mature early with a high yield per acre. The wood is light, soft, and easily worked. Though it is an all-purpose wood, as well as a specialty wood, it is manufactured principally for box boards in Rhode Island.

White oak, (*Quercus alba*), is found scattered in all sections of the state, rarely in pure stands, but generally in mixture with other oaks. The tree requires a deep, porous, well-drained, heavy soil for best growth and will not do well on light soils. The wood is very strong, tough, heavy, hard, and durable. The tree makes a very slow growth especially in the early years. Reproduction is by seed and sprouts. It is sawed into 2-inch plank for general use and railroad crossties at the saw mills. Much of the younger growth is cut into cordwood.

Red oak, (*Quercus rubra*), is more common in all parts of the state than the white oak. The tree grows best on thin, porous, gravelly clay, if well drained, and makes much faster growth than the white oak under optimum conditions. The wood is hard, heavy, strong and coarse grained. Reproduction is both by means of seed and by sprouts. It is sawed mainly into 2-inch plank and railroad crossties. A great deal of the younger growth is cut into cordwood.

Chestnut, (*Castanea dentata*), is no longer considered an important tree species in Rhode Island. The inroads of the chestnut blight have completely wiped out the live chestnut trees from the Rhode Island woodlots. The chestnut

now being cut consists of trees that have been dead for a number of years, and the sapwood is badly decayed. The wood is easy to work, durable, and holds its shape well. It is being cut for cordwood, poles, ties and posts, and to a limited extent, for box boards.

Red maple (*Acer rubrum*), is found scattered through the woods of the state predominantly in the swampy or moist locations. The wood is moderately light, with a thick, often discolored sapwood. The growth is rapid; reproduction occurring by frequent seed years, and by sprouts. It is used for railroad crossties and cord-wood.

Hard pine (*Pinus rigida*), is found abundantly in pure stands in southern Rhode Island and scattered in many other sections on light soil. It is a small, usually malformed tree with very little commercial value because of its small size, and poor quality of wood. The wood is hard, brash, brittle and resinous. Reproduction of this tree is excellent and, due to the thick bark, resists the grass fires. This species is common in a great many sections. The wood is sawed into box boards and, in limited quantities, can be graded in with white pine box boards.

The following tables and charts were developed from data secured by personal interviews from the saw mill men of Rhode Island concerning their business in 1924. The firms and persons operating saw mills in Rhode Island during 1924 are listed together with their addresses. A short analysis of each table follows:-

Table #I and Chart 1:-

These give a graphic idea of the proportion of land area of Rhode Island devoted to various agricultural ends. Thirty-three per cent (33%) of the land area, (200,000 acres) is devoted to forest growth. These estimates are based upon the State Census figures and are regarded as conservative. Several foresters have stated that there are 250,000 acres of forest land in Rhode Island.

Table #II:-

This table states the amounts of various forest products manufactured from the five principal timber groups, white pine, white and red oak, chestnut, red maple, and hard pine. It is customary for operators to report sawed railroad crossties in with the amount of board feet of lumber sawed. Allowances for this fact were made, in preparing the lumber figures for this table in oak and chestnut lumber by use of the Forest Service factor of 30 standard ties to the thousand board feet. Having given the number of railroad crossties of oak and chestnut produced by each operator, by computing the board feet represented, and subtracting same from total cut, the result is the board feet of lumber sawed.

Table IIIA-

This table does not offer a true comparison of the lumber cut of 1923 and 1924, since returns from 12 mills are recorded in the 1923 census of manufacturers' tables by the United States Forest Service; the mills cutting less than 50,000 board feet being omitted. Thirty-six mills are listed in the 1924 tables of this survey. However, the 1924 production in board feet is listed including the board measure of the sawed railroad crossties, thus placing both figures on the same basis except for the number of mills reporting. Assuming that the production follows the same ratio as the number of mills reporting, -i.e.- 3 to 1, it is seen that white pine and oak production is practically the same for both years while chestnut production slumps fifty per cent.

Table #IV and Chart 2:-

This table lists the returns from each species-group. The chart gives a graphic picture of the same by percentage. Oaks lead returning 43.4% of total revenue. Chestnut is second with 25.2% and white pine almost tied for second place with an even 25% of total revenue returned.

Table #V and Chart 3:-

This table lists the returns from the five principal forest products manufactured. The chart gives a graphic picture of the same. Lumber production returns 49.2% of total revenue from all forest products. Railroad crosstie production is second with 22.4%, and cordwood production is third with 15.8% of total revenue returned.

Table #VI:-

This table gives a detailed statement of the species cut, products manufactured, quantities of same, average value of units, and total value by products and by species. The prices were averaged from the returns of 27 out of 34 mills cutting white pine, 23 out of 29 mills cutting oak, 26 of 31 mills cutting chestnut, 2 out of 4 mills cutting maple, and 6 out of 6 mills cutting hard pine. The average prices stated for railroad crossties, cord-wood, poles and posts were obtained in the same way by averaging returns from all operators.

Chart 4:-

This gives a comparison of the returns on lumber sawed from the five principal kinds of trees. White pine leads with 51% of the total returns, which is more than all other four kinds put together.

Chart 5:-

This gives a comparison of the amount of board feet sawed into lumber according to kind of tree species. White pine again leads with 54.1% of total cut, or more than the other four kinds together.

Chart 6:-

This chart is a composite of the two previous charts number 4 and 5 comparing the production and value of lumber. White pine leads in both quantity sawed and in monetary returns. Oak places second in monetary return and chestnut third. Chestnut is second in regard to quantity of production

however, with oak taking third place. Maple and hard pine rate poor fourth and fifth positions respectively.

SAWMILLS

Agnewsac, H.	Glendale, R. I.
Albro, Alanson.	W. Greenwich, R. I.
Arnold, Kit.	W. Kingston, R. I.
Barber, Carl.	Hope Valley, R. I.
Barber & Reynolds	Arcadia, R. I.
Bartlett, F. M.	Nasonville, R. I.
Batchelor, -	Moscow, R. I.
Bowen, John W.	Apponaug, R. I.
Bozoian, Hachadoor	Woonsocket, R. I.
Brayton, Albert	Smithfield, R. I.
Carlos, Thomas	Pascoag, R. I.
Cook, George	Bellingham, Mass.
Cole, Rufus	Foster, R. I.
Eddy, John	Manton, R. I.
Edwards, Lucian	N. Scituate, R. I.
Edwards, William	Exeter, R. I.
Fulford, William	Exeter, R. I.
Girard, Henry N.	Wickford, R. I.
Girard, Joseph	Hope Valley, R. I.
Gray, -	Adamsville, R. I.
Greene, Lowell	Washington, R. I.
Hall, Edward	Plainfield, Conn.
Havens, Elmer	Coventry, R. I.
Hawkins, Walter	W. Gloucester, R. I.
Hopkins, E.	Greene, R. I.

Hopkins, Fred	Scituate, R. I.
Hoxie, Edward	W. Greenwich, R. I.
Jordan, Stanley	Cranston, R. I.
Knight Bros.	W. Greenwich, R. I.
Lawton, J. Edward	Phoenix, R. I.
Mc Kenna, Eugene	E. Greenwich, R. I.
Nichols, Elmer	Summit, R. I.
Peckham, Charles	Cherry Valley, R. I.
Potter, -	Nashua, N. H.
Rhodes, -	Bellingham, Mass.
Richmond & Sunderland	Washington, R. I.
Salisbury, D.	Coventry, R. I.
Simmons, David W.	Tiverton, R. I.
Simmons, Lester P.	Foster Center, R. I.
Teere, Ben	Glocester, R. I.
Teere, George	Chepachet, R. I.
Swan, Lewis	Bradford, R. I.
Sweet, S. S.	Hopkins Mills, R. I.
Tarbox, Elmer	Crompton, R. I.
Whitman & Rathbun	Washington, R. I.
Williams, Ed.	Sterling, Conn.
Young, Willoughby P.	N. Scituate, R. I.

Table # 1.

ESTIMATED LAND USE IN RHODE ISLAND.
(based upon Census figures)

	<u>Estimate</u>	<u>Percent</u>	<u>Census estimate-*</u>
<u>Forest Land</u>	200,000	33. %	153,435
Pasture Land	168,000	28. %	128,781
Mowing Land	102,000	17. %	78,824
Plow Land	57,000	9.5%	43,772
Unimproved Land	49,200	8.0%	38,408
Bog Meadow	13,800	2.3%	11,348
Salt Marsh	3,600	.6%	3,492
Orchard	6,500	1.5%	6,564
Mines, Pits, etc	---	---	413
<hr/>			
	600,100	99.9%	465,047 acres

* - Census figures account for the use of but 465,047 acres of the total area of 682,880 acres of land.

Chart #1.

ESTIMATED LAND USE IN RHODE ISLAND.
(Based upon Census figures)

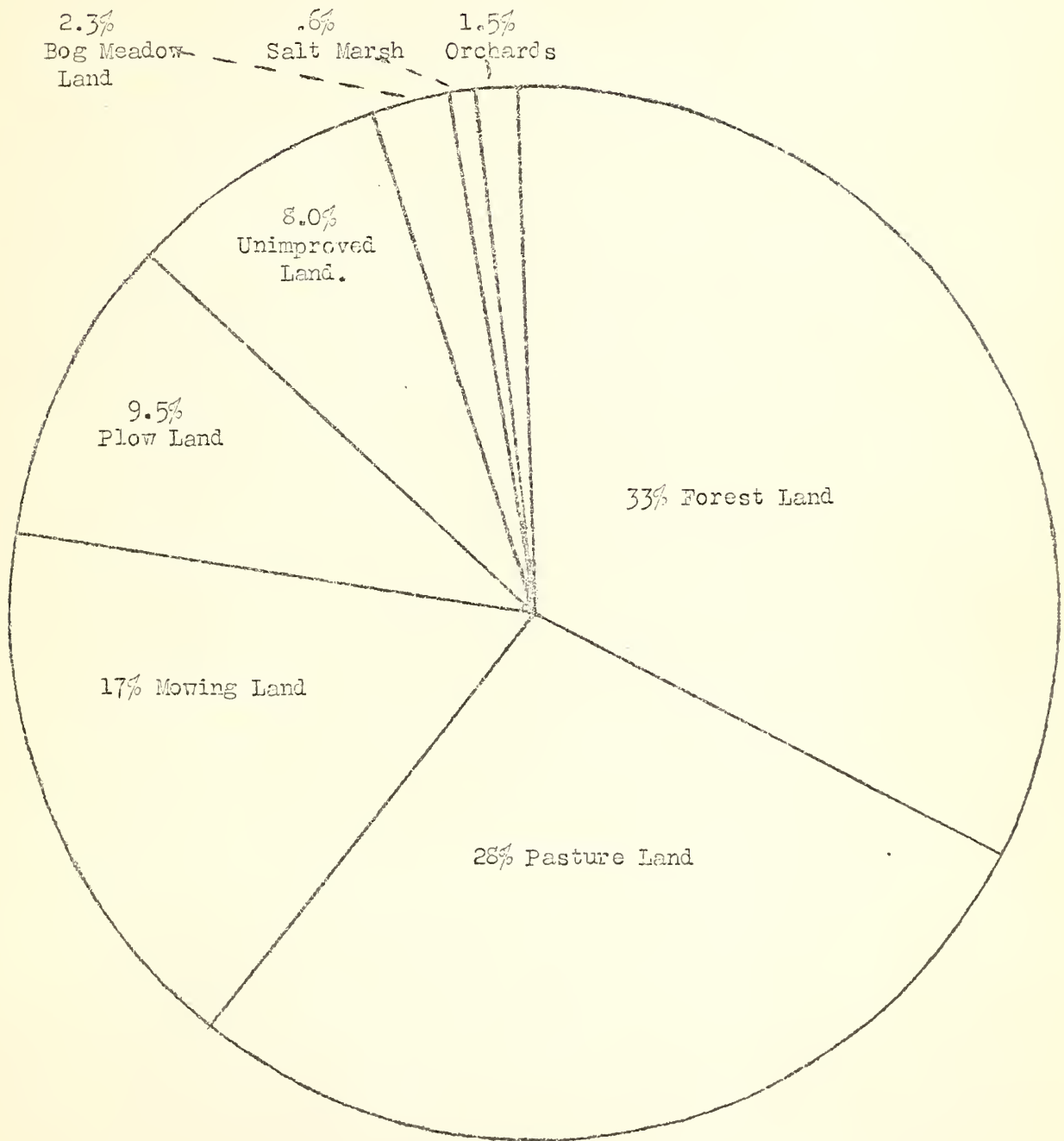


TABLE # 2.

FOREST PRODUCTION

species	lumber	cordwood	crossties	poles	posts
White Pine	3,587.5 M	---	---	---	---
Oaks	1099 M NB.	7,778 cd.	68,005	360	250
Chestnut	1479 M NB.	925 cd.	13,010	4,295	9930
Maple	205 M	407 cd.	7,535	---	30
Hard Pine	265 M.	---	---	---	---
Total	6,635.5 M bd ft	9,110 cd	88,550 ties	4,655 poles	10,210 posts

N.B. - Oak and Chestnut crossties were reported by operators by number and duplicated in quantity of board feet saved. The factor used by the Forest Service was used to find actual lumber cut exclusive of sawed crossties. A standard face tie contains 33 1/3 bd. ft. or roughly there are 30 ties to the 1000 bd. ft.

TABLE # 3.

PRODUCTION COMPARED WITH THAT OF 1923.

SPECIES	1923 12 mills	1924 36 mills	1924 X 36 mills
White pine	1,290	3,587.5	3,587.5
Hard pine	---	265	265
Henlock	40	---	---
Oaks	1,069	3,365	1,099
Chestnut	1,350	1,909	1,479
Maple	190	205	205
Birch	50	---	---
Ash	15	---	---
Hickory	13	---	---
Total	4,017 M	9,331.5 M	6,635.5 M

The figures of 1923 production are taken from the U. S. Dep't of Commerce report -"Census of Manufactures" compiled in cooperation with the Forest Service. These figures were obtained from 12 mills while the 1924 figures were obtained from 36 operating plants. The 1923 figures also include sawed crossties as it is customary to do so by the Rhode Island sawmill men in giving total board feet sawed. Column 1924 X gives the 1924 production in round and square edged boxboard and plank exclusive of sawed ties.

TABLE #4.

VALUE OF PRODUCTION BY SPECIES

Species	Value
White Pine	\$ 99,562.50
Hard Pine	\$ 7,155.00
Oaks	\$172,634.25
Chestnut	\$200,570.70
Maple	\$ 18,584.00
Total	\$398,506.45

These values include returns from Lumber, Cordwood, Cross-ties, Poles, and Posts.

Chart #2.

VALUE OF FOREST PRODUCTS MANUFACTURED IN 1924.

(includes lumber, cordwood, ties, poles, and posts)

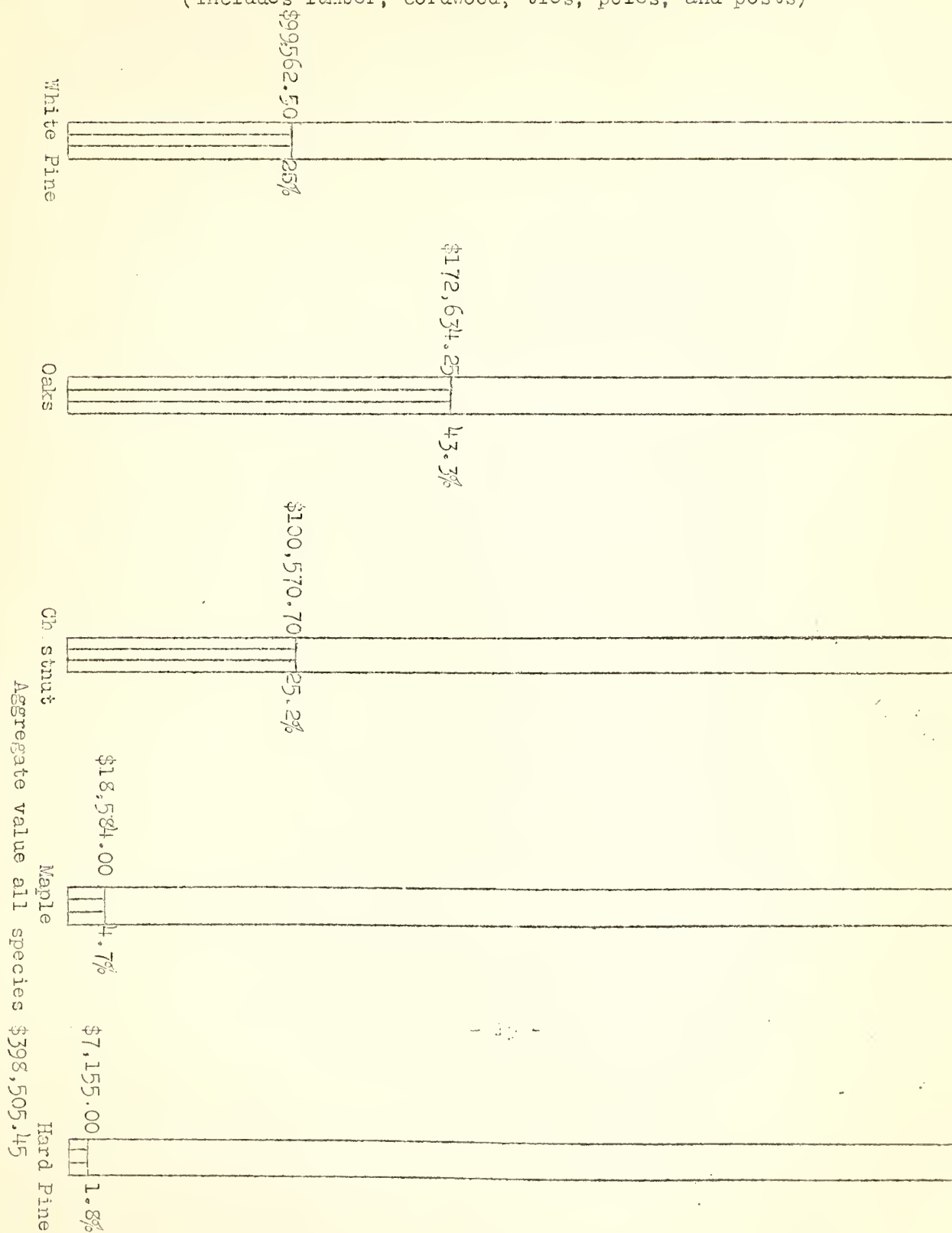


TABLE # 5.

VALUE OF PRODUCTION BY ARTICLES MANUFACTURED.

Article made	Value
Lumber	\$ 195,831.00
Cordwood	\$ 63,122.50
Crossties	\$ 89,540.75
Poles	\$ 46,550.00
Posts	\$ 3,461.20
Total	\$ 398,505.45

Chart #3.

AGGREGATE VALUE OF FIVE PRINCIPAL FOREST PRODUCTS MANUFACTURED IN 1924.

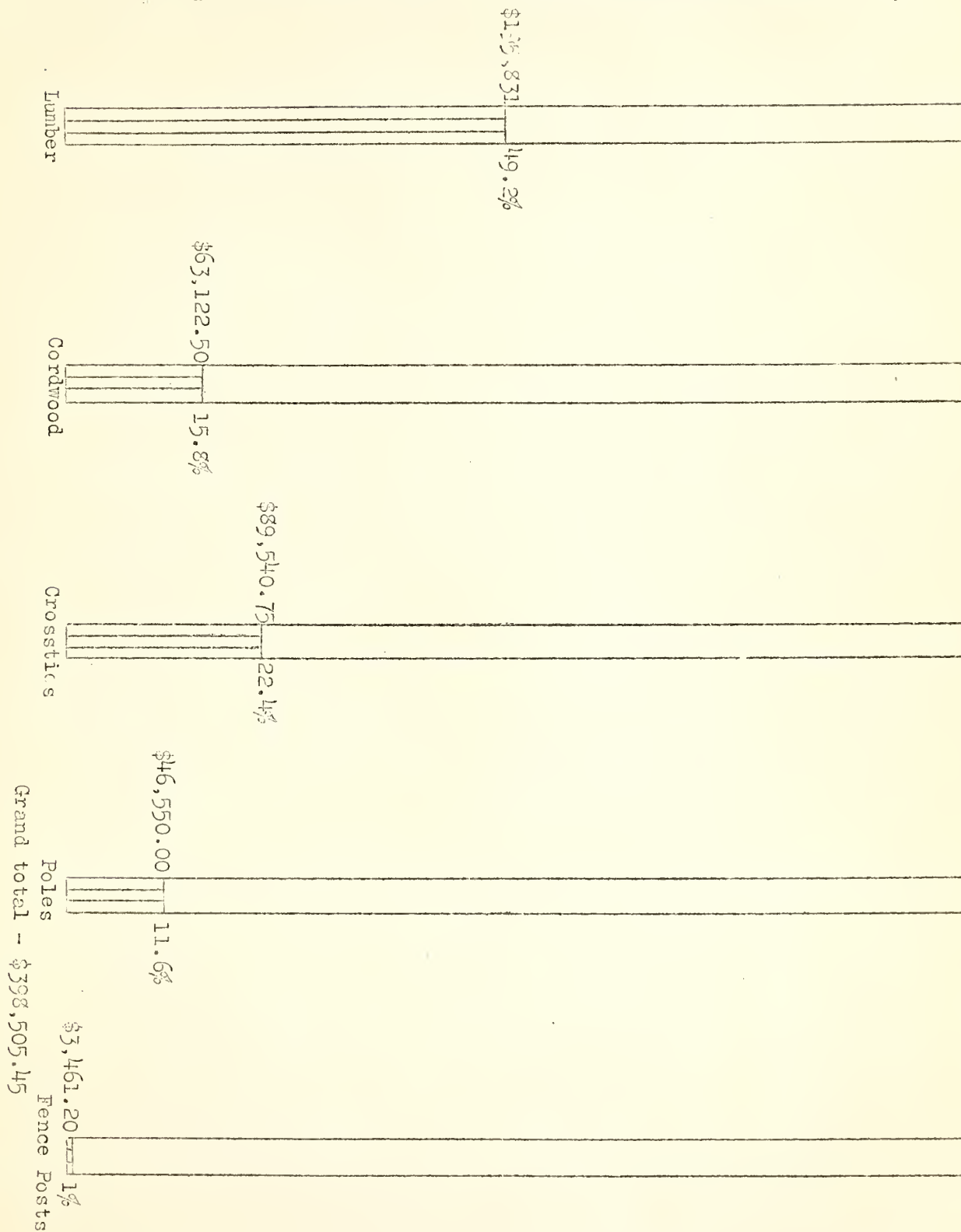


TABLE #6.

DETAILED VALUE OF FOREST PRODUCTS BY SPECIES.

Species	Product	Quantity	Ave. Value unit	Total value	Total value by species
White Pine	plank	545.5 M)	\$ 27.00	\$ 99,562.50	\$ 99,562.50
	Boxboard	3042)			
Hard Pine	Boxboard	265 M	\$ 27.00	\$ 7,155.00	\$ 7,155.00
Oak	Plank	1099 M	\$ 42.00	\$ 46,158.00	\$ 172,634.25
	Ties	68,005	\$ 1.05	\$ 68,345.25	
	Cordwood	7778 cd	\$ 7.00	\$ 54,446.00	
	Poles	360	\$ 10.00	\$ 3,600.00	
	Posts	250	\$.34	\$ 85.00	

Chestnut	Plank	1479 M	\$ 23.50	\$ 34,756.50	\$ 100,579.70
	Boxboard)			
	Ties	13,010	\$ 1.05	\$ 13,660.50	
	Cordwood	925 cd.	\$ 6.30	\$ 5,827.50	
	Poles	4295	\$ 10.00	\$ 42,550.00	
Posts	9930	\$.34	\$ 3,376.20		

Maple	Plank	205 M	\$ 40.00	\$ 8,200.00	\$ 18,584.00
	Ties	7535	\$ 1.00	\$ 7,535.00	
	Cordwood	407 cd.	\$ 7.00	\$ 2,849.00	

Totals				\$ 393,505.45	\$ 398,505.45

Chart #4.

VALUE OF LUMBER SAWED IN RHODE ISLAND IN 1924.

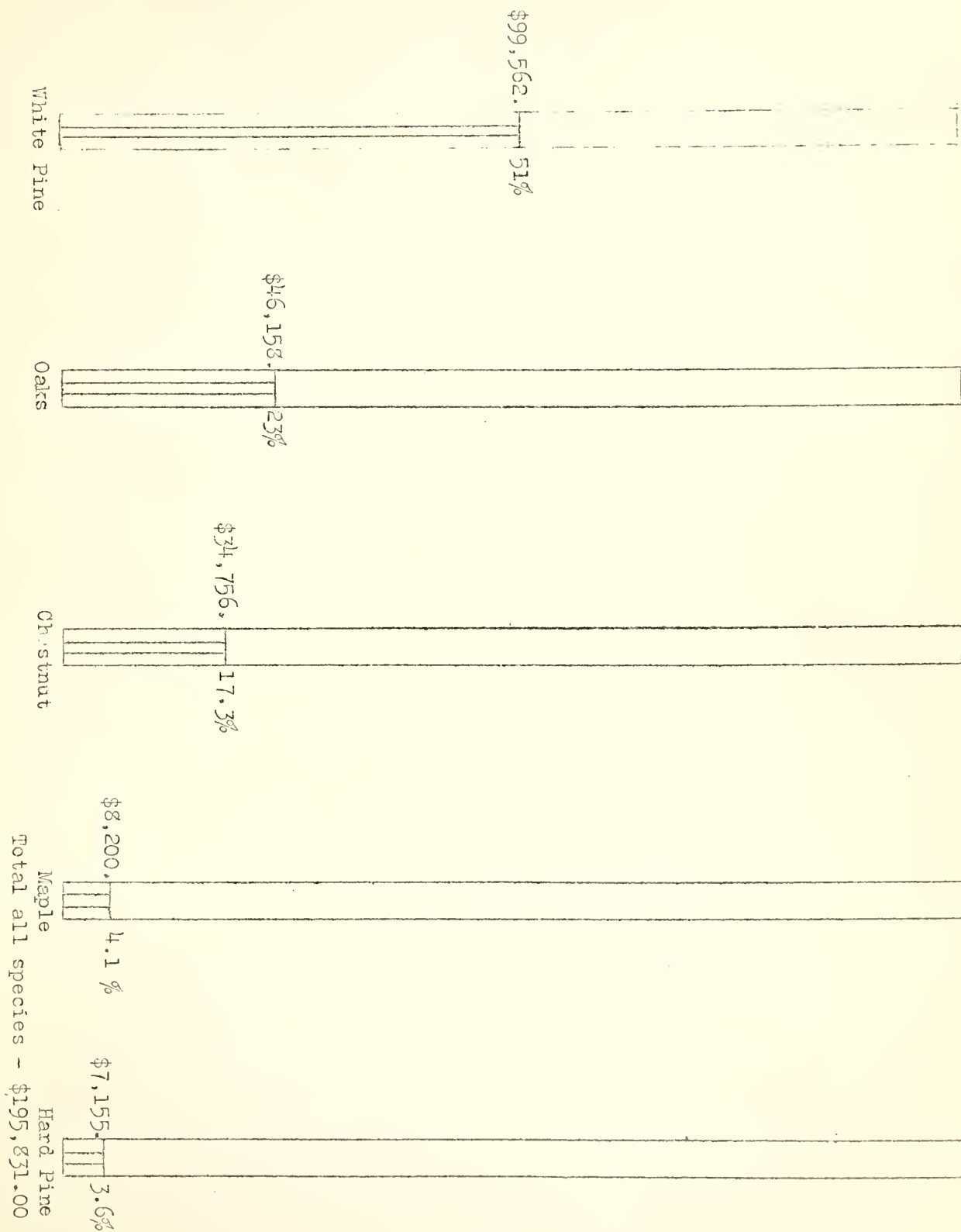


Chart # 5.

LUMBER SAWED IN RHODE ISLAND IN 1924
In board feet

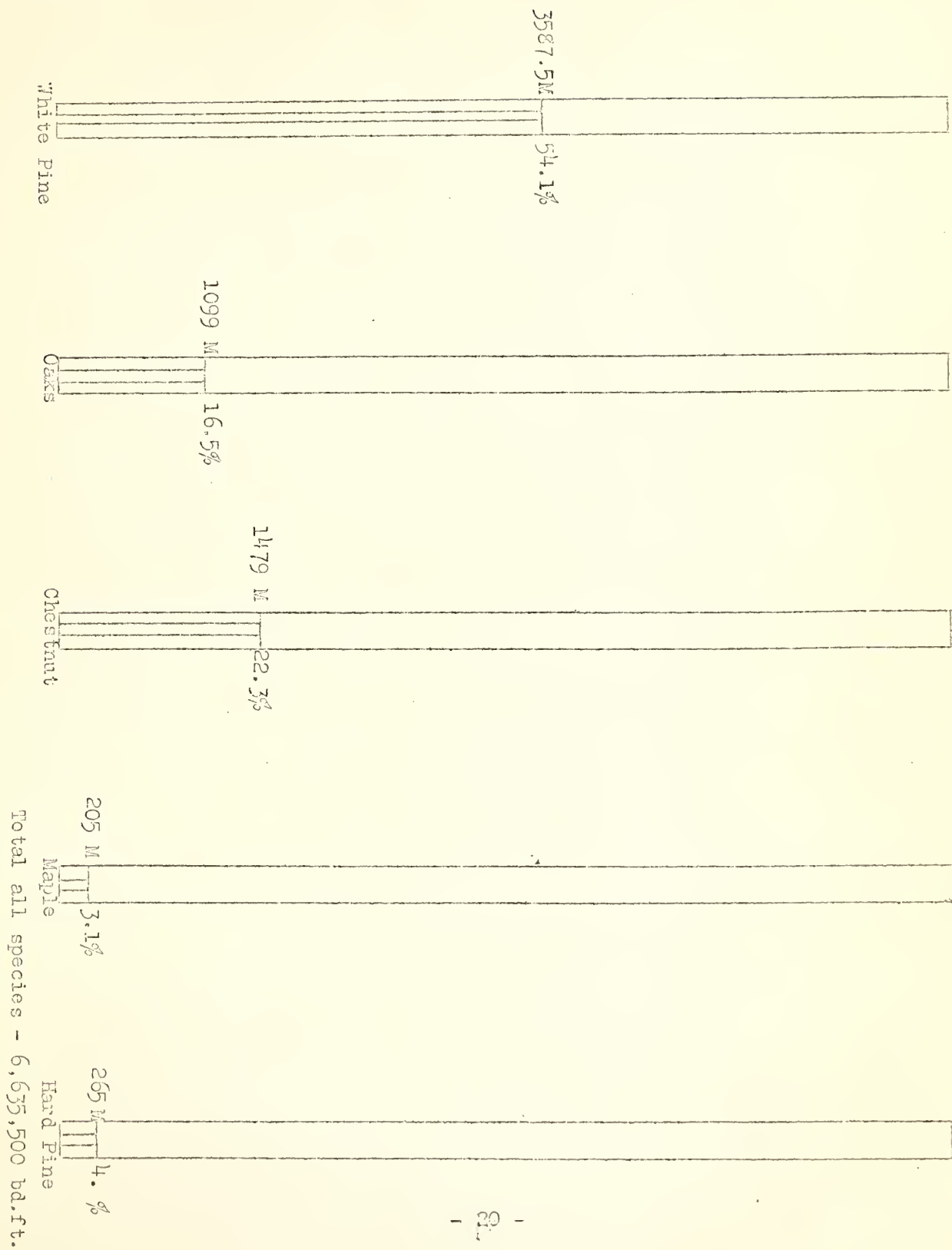
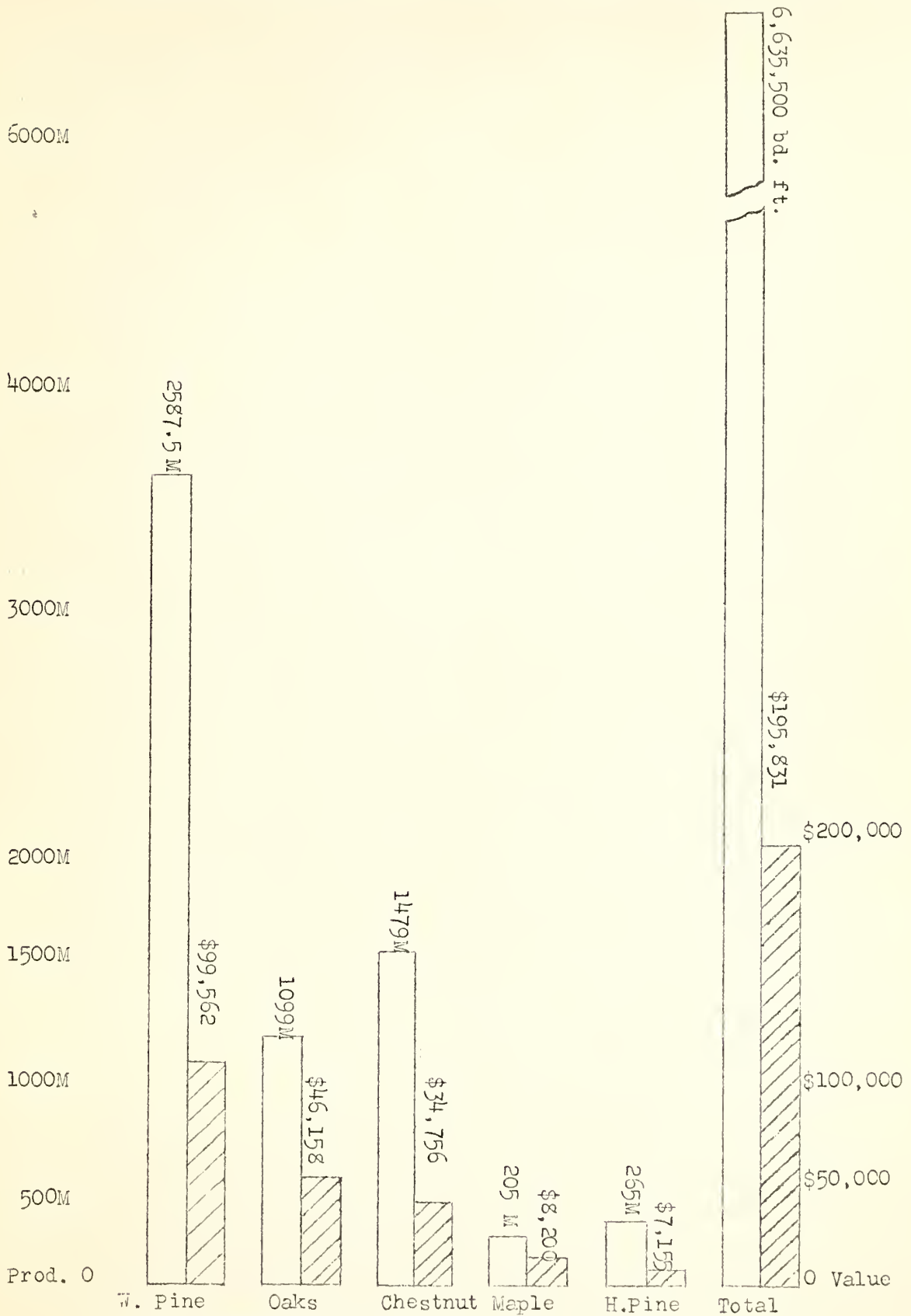


Chart # 6.

COMPARATIVE PRODUCTION AND VALUE OF LUMBER IN RHODE ISLAND IN 1924.



Blank column denotes production in 1,000 m bd. ft. units.
Cross-hatched column denotes Value of production.

